MCI Communications Corporation

MCI

1801 Pennsylvania Avenue, NW
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ORIGINAL

January 24, 2000

Magalie Roman Salas
Office of the Secretary
Federal Communications Commission
445 12th Street, S.W.
Room TW-B204
Washington, D.C. 20554

Re: **CC Docket No. 94-1; Price Cap Performance Review for Local Exchange Carriers**
CC Docket No. 96-262; Access Charge Reform

Dear Ms. Salas:

Enclosed herewith for filing are the original and four (4) copies of MCI WorldCom, Inc.'s Reply Comments in the above-captioned proceeding.

Please acknowledge receipt by affixing an appropriate notation on the copy of the Comments furnished for such purpose and remit same to the bearer.

Sincerely yours,

Chris Frentrup

Chris Frentrup
Senior Economist
1801 Pennsylvania Ave, NW
Washington, DC 20006
(202) 887-2731

MCI Telecommunications Corporation

Enclosure

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Price Cap Performance Review for Local Exchange Carriers	)	CC Docket No. 94-1
	)	
	)	
Access Charge Reform	)	CC Docket No. 96-262
	)	

REPLY COMMENTS OF MCI WORLDCOM, INC.

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Senior Economist
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(202) 887-2731

MCI WorldCom, Inc.

January 24, 2000

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SUMMARY

MCI WorldCom revises the Commission's Total Factor Productivity study in response to such of the criticisms made by the local exchange carriers (LECs) as are valid. However, even with these minor corrections, the X factor achieved by the price cap LECs has been in the range of 6.9 to 11.2 percent, depending on the time period examined and the relative mix of inputs used to provide interstate services. The most reasonable range of estimates of LEC productivity is between 9.1 and 9.5 percent. Given the LECs' proven ability easily to meet the conservative X factors previously selected by the Commission, MCI WorldCom urges the Commission to select an X factor from the upper level of this range of reasonableness.

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REPLY COMMENTS OF MCI WORLDCOM, INC.

MCI WorldCom, Inc. (MCI WorldCom) hereby submit its reply comments regarding issues raised in the Further Notice of Proposed Rulemaking released on November 15, 1999, in the above-captioned docket.[1]

I. INTRODUCTION

In response to a remand from the United States Court of Appeals for the District of Columbia Circuit,[2] the Commission issued the instant FNPRM to solicit comment on the productivity offset, or X factor, to be used in the interstate price cap plan. The local exchange carrier (LEC) parties have submitted comments that

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1 *Price Cap Performance Review for Local Exchange Carriers*, Further Notice of Proposed Rulemaking, CC Docket Nos. 94-1 and 96-262, FCC 99-345 (rel. November 15, 1999) ("FNPRM").

2 *USTA v. FCC*, 188 F. 3d 521 (D.C. Cir. 1999)

attempt to demonstrate that the current 6.5 percent X factor is excessive.[3] Customer and consumer groups have submitted studies and analyses supporting the finding in the Commission's studies that indicate that the current 6.5 percent X factor is understated.[4]

In these reply comments, MCI WorldCom revises the Commission's Total Factor Productivity (TFP) study in response to those criticisms made by the LECs, discussed infra, which are valid. However, even with these minor corrections, the X factor achieved by the price cap LECs has been in the range of 6.9 to 11.2 percent, depending on the time period examined and the relative mix of inputs used to provide interstate services. The most reasonable estimate of LEC productivity is between 9.1 and 9.5 percent. Given the LECs' proven ability easily to meet the conservative X factors previously selected by the Commission, MCI WorldCom urges the Commission to select an X factor from the upper level of this range of reasonableness.

II. THE COMMISSION'S TFP STUDY CONTAINS A FEW DATA ERRORS THAT HAVE LITTLE EFFECT ON THE RESULTS

The LECs allege that a number of data errors are included in the Commission's TFP study. For the most part, these errors are the result of the inclusion of Southern New England Telephone (SNET) data in the Bell Operating

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[3] See, Comments of the United States Telecom Association (USTA) at Attachment 2.

[4] See, e.g., Comments of AT&T Corp. at Appendix A, Comments of GSA at 13, Comments of AdHoc at Attachments 1-4.

Company data in 1998,[5] or are due to revisions to the ARMIS data filed by the LECs themselves since the publication of the Statistics of Communications Common Carriers (SOCC), which is the source of much of the company-specific data.[6]

In addition to these revisions to LEC-specific data, the LECs also claim that the Commission has used an incorrect economy-wide input price growth index in its TFP study. The Commission correctly updated the non-farm business TFP index,[7] but MCI WorldCom has been unable to confirm the economy-wide input price growth index that the Commission uses in its latest TFP studies. In our revised TFP study, therefore, we have used the input price growth index provided in USTA's comments.

One final data modification suggested by the LECs is an adjustment to 1996 Labor Compensation.[8] USTA claims that the reported Labor Compensation numbers for 1996 are inflated due to a difference in the accounting treatment of

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5 In 1998, SNET merged with SBC Telecommunications, Inc. In the SOCC, the reported Total Bell Operating Company data therefore includes SNET data as of 1998.

6 In addition to the necessary data revisions identified by the LECs, MCI WorldCom has identified one additional necessary modification. The 1993 data reported by the Commission for 1993 Depreciation and Amortization expense contains a transcription error. The correct amount should be $14,244,514,000 rather than the $13,244,514,000 that the Commission reported.

7 The index can be found at the Bureau of Labor Statistics' website under the "Most Requested Series." MCI WorldCom confirmed the index by examining Series ID: MPU750003 (1992 = 100) on January 18, 2000.

8 Comments of USTA at Attachment 2, page 25.

certain labor expenses in that year. While the compensation reported for that year does appear to be unusually large, making the adjustment USTA proposes has a de minimis effect on the computed X factor. Since USTA has not sufficiently documented this proposed adjustment, MCI WorldCom has not reflected that adjustment in its analysis, discussed infra, in Section V.

A complete list of the data changes MCI WorldCom has made in the TFP study are listed in Appendix A to these reply comments. Taken together, these changes alter the results of the TFP study relatively little.

III. A CORRECT ADJUSTMENT FOR CAPITAL COSTS MUST BE MADE IN THE TFP STUDY

Recognizing that the Commission's previous decision to treat capital costs as the residual after labor and material costs were identified led to anomalous results - and specifically that an X factor that was set too low would result in a lower X factor being computed in subsequent TFP studies - the 1999 TFP study in the FNPRM proposed to adjust the cost of capital for the change in the Moody's Baa bond index. Because rates in 1990 were set under rate of return principles to earn the authorized rate of return of 11.25 percent, the first year of price caps (1991) was assumed to reflect a competitive level of earnings. In the other years included in the study, the competitive cost of capital was assumed to be equal to the cost of capital in 1991 adjusted by the change in the Moody's bond rate between 1991 and the year in question.

USTA raises several objections to this methodology. First, it argues that

Moody's Baa rate is not the appropriate measure of opportunity costs for the LECs.[9] If LECs or their shareholders were to "cash out" their investment and exit the telecommunications industry, USTA claims, they would not invest in the types of corporate bonds reflected in the Moody Baa index, but would instead invest in some other large industrial concern. Returns for such investments are more nearly reflected, according to USTA, in the rate of return for 875 large industrial companies reported by Value Line.[10] Second, USTA claims that, even if an adjustment is warranted, the capital cost adjustment is incorrectly made to the entire rental price of capital, including return on capital, depreciation, amortization, and taxes. Only the return on capital should be adjusted, according to USTA, and return on capital is only about one third of the total rental price of capital.[11] Third, no adjustment of LEC capital costs should have been made in the years prior to 1991, because the LECs earnings were set under rate of return rules, and thus presumably were reasonable.[12] Finally, using an externally determined cost of capital for the LECs, as the Commission has done, requires that a symmetrical adjustment for an externally determined rate of return must be performed to the economy-wide TFP and input price growth computations.[13]

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9 USTA Comments, Attachment 2 at 6-7.

10 Id. at 7.

11 Id. at 9-10

12 Id. at 13-15.

13 Id. at 16-17.

A. USTA misunderstands the role of the Moody's Baa Index in the Commission's TFP study

USTA's claim that the Value Line 875 Industrial rate of return represents a more reasonable alternative investment for the LECs misunderstands the use of the Moody Baa bond index in the Commission's capital cost adjustment. The Commission's study does not claim that the LECs' return should equal the return on Baa bonds. Rather, the Commission's capital costs adjustment merely retains the differential between the bond rate and the LECs cost of capital, assuming only that the absolute change in the LECs' cost of capital and in the Moody's index rate are the same. Thus, if the Moody's bond index rate were 6.5 percent when the LECs' cost of capital were 11.25 percent, a fall in the bond rate to 6.25 percent would imply that the LECs' cost of capital had fallen to 11.0 percent.

Such a relationship is plausible, because capital can be readily moved from one instrument to another to exploit any differential in growth of return. In the absence of any change in either the risk of the two instruments or the risk premium demanded by investors, the two instruments should move in parallel.[14] Thus, the Commission's proposed use of the absolute change in the Moody's Baa bond index rate should give a reasonable approximation of changes in the LECs' cost of equity.

B. The cost of capital adjustment should not be applied to Depreciation & Amortization expense or cost of debt

USTA is correct that the Commission's TFP study must be modified so that

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[14] That the price cap companies are not seen as more risky can be seen from the fact that there has been no significant downgrading of LEC bond ratings nor a substantial increase in their betas.

the cost of capital adjustment is not applied to the portion of property costs that represent depreciation and amortization expenses. Such costs do not vary with the return on capital, but are rather a return of capital. Because the depreciation rates allowed by the Commission and reflected in the LEC's books are the best estimate available of the economically correct depreciation rates, no further adjustment to depreciation costs needs to be made.

Similarly, the change in the Baa bond index rate will not necessarily reflect changes in the LECs' cost of debt or in their depreciation and amortization expense. While changes in the LECs' cost of new debt should be consistent with changes in the Moody's Baa index, the composite cost of debt will reflect debt contracted in earlier time periods. Since the LECs' debt instruments tend to have minimum time periods before the debt can be called in, changes in the LECs' overall cost of debt will lag somewhat the change in the market cost of capital. In a time of falling cost of debt, the LECs' overall cost of debt would be expected to fall more slowly than the corporate bond rate.[15] Thus, the LECs' cost of debt should not be adjusted by the change in Moody's Baa index.

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[15] In fact, this situation has occurred in the time since the Commission set the current 11.25 percent rate of return. At that time (based on 1989 data), the Commission found that the LECs' cost of debt was 8.81 percent. Using the same methodology to compute the LECs' cost of debt in 1998, the latest year for which data are available, the LECs' embedded cost of debt is now 7.26 percent, a decline of 1.55 percentage points. In that same period, the Moody's Baa corporate bond rate fell by 2.96 percentage points.

C. Cost of capital adjustments for periods when the LECs were under rate of return regulation are appropriate

USTA's objection that no adjustment should be made in the cost of capital before 1991 is incorrect. The LECs' cost of capital under rate of return regulation was set by the Commission at discrete intervals. However, it is highly unlikely that the market required a rate of return for the LECs of exactly 12.75 percent from divestiture in 1984 to January 1, 1987, exactly 12.0 percent from that date to January 1, 1991, and then exactly 11.25 percent from that date to the present. What is more likely to be the case is that the rate of return required by the market adjusts constantly, a little bit at a time, and that the regulator reflects those changes in a new rate of return prescription only after a sufficiently large change in the required rate of return has occurred. Thus, adjustments to the reported earnings are reasonable even during periods of rate of return regulation, because the authorized rate of return will not necessarily exactly reflect the true cost of capital at any given time.

D. Because the economy as a whole is competitive, no adjustment for an externally determined cost of capital is necessary for the economy-wide data

Finally, no adjustment is needed for the economy-wide cost of capital. An adjustment is needed in the LECs cost of capital because there is neither sufficient competition nor regulation to ensure that the LECs' earnings are constrained to a competitive level. Only if there is insufficient market control of an industry's or sector's prices is there a danger of the achieved return exceeding the economic

cost of capital.

It is reasonable to assume that, for the economy as a whole, companies are earning a normal rate of return. Only in a few industries, such as local telephony, is there sufficient monopoly power to allow rates to persist at above cost levels. However, these industries are not a sufficiently large portion of the economy to affect the economy-wide average cost of capital. Thus, no adjustment for the capital cost in the economy as a whole is necessary in a study of LEC TFP.

IV. LOCAL DIAL EQUIPMENT MINUTES SHOULD BE THE MEASURE OF LOCAL USAGE

The LECs argue that dial equipment minutes are an inappropriate measure of local output.[16] This is the case, they claim, because only 33 percent of intrastate revenues, and 20 percent of local revenues are usage-related.[17] Therefore, they argue, the number of access lines would be a more appropriate measure of local demand.

The purpose of the X factor is to regulate interstate access prices, which are primarily usage-sensitive. Increased usage of the network, as reflected in increased minutes of use, are an important source of productivity gains. So long as the X factor is set using total company results, it is appropriate to use minutes as a measure of outputs. Of course, if the X factor is set using interstate-only results, the measure of local usage becomes irrelevant.

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16 See, e.g., Comments of USTA at Attachment 2, page 20-23.

17 Comments of USTA at 13.

V. MCI WORLDCOM'S REVISIONS TO THE COMMISSION'S TFP STUDY YIELD AN INTERSTATE X OF 9.1 TO 9.5 PERCENT

MCI WorldCom has revised the Commission's TFP study in the light of the discussion supra. The resulting study is presented in Appendix B to these comments. The study is presented in the same format as the Commission's TFP study, with the addition of three tables.

The first new table, Table B-7A, computes a competitive rate of return for the LECs using the methodology employed by the Commission in setting the current 11.25 percent rate of return.[18] For each year, the LEC cost of debt and percent equity is computed from ARMIS or Form M data.[19] The cost of equity in 1989 is set at 13.19 percent, the cost of equity used by the Commission to set the 11.25 percent rate of return. In all other years, the cost of equity is assumed to be 13.19 percent adjusted for the change in the Moody's Baa bond index rate for that year.[20] For the reasons discussed supra in Section III.B, the cost of debt is not adjusted.

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18 See In the Matter of Represcribing the Authorized Rate of Return for Interstate Service of Local Exchange Carriers, Order, CC Docket No. 89-624, 5 FCC Rcd 7507, 7532 (ROR Prescription Order).

19 ARMIS data is available for 1990 through 1998. For 1989 and prior years, the cost of debt is assumed to be the cost of debt reported in the ROR Prescription Order. Since the years 1985 to 1989 were years of declining interest rates, this will present a conservative estimate of the decline in interest rates over the years 1985 through 1998.

20 The reasonability of using the Moody's Baa index to adjust the cost of equity is indicated by the fact that this methodology results in a competitive rate of return in 1985 of 12.92 percent, which is very close to the Commission's then-prescribed 12.75 percent rate of return. The 1998 competitive rate of return of 8.89 percent is also consistent with the rate of return studies filed by MCI WorldCom and others cited in our comments at footnote 5.

The second new table, Table B-7B, replaces the Commission's Table B-7 in computing the Adjusted Imputed Cost of Capital. Table B7-B first removes the Depreciation & Amortization expense from Property Income, and then adjusts the resulting Property Income excluding Depreciation and Amortization expense for the Competitive Cost of Capital computed in Table B-7A. An Adjusted Imputed Competitive Cost of Capital is then computed, which feeds into Table B-8, as in the Commission's model.

The remaining tables, B-9 through B-13, are computed in the same manner as the equivalent Tables in Appendix B of the FNPRM, with one exception. In Table B-9, the Adjusted Operating Income is reduced only by the Labor Cost Adjustments in Table B-5. The Commission's study incorrectly removed the tax effect of the adjustment to property income, because taxes are not reported in operating income.

Finally, there is an additional Table B-14, which displays interstate X factor results. As presented in Appendix B, this table compares growth in interstate demand with growth in total company inputs to compute the LECs' TFP. As discussed in our comments, this is likely to give a conservatively low estimate of the interstate X factor.[21]

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[21] The model can be easily modified to reflect a different weighting of inputs for the interstate services. By revising the labor, capital and materials share in Table B-10, and carrying those modifications through in subsequent tables of the model, an interstate TFP can be computed that assumes a different mix of inputs is used to provide interstate services than is used for total company services. MCI WorldCom is providing an electronic version of the Excel workbook that creates these tables along with its filing, so interested

MCI WorldCom's revisions to the Commission's TFP study respond to the valid criticisms made by parties. It corrects identified data errors. It also refines the capital cost adjustment so that it applies only to return on capital. Even with these adjustments, the study still implies a total company X of 5.5 to 6.1 percent. In addition, it suggests an interstate X factor of 9.1 percent or higher, if interstate services are assumed to use the same mix of inputs as total company services.

VI. USE OF TOTAL COMPANY RATHER THAN INTERSTATE RESULTS BIASES THE X FACTOR DOWNWARD

In our comments, MCI WorldCom noted that the TFP must be a weighted average of the individual factor productivities. By adjusting the relative weights in Table B-10, one can place bounds on the effect of different mixes of inputs being used to provide interstate services. At the very worst, if the only input used to provide interstate services were Materials, the interstate X factor would be 6.9 percent based on the results for 1986 through 1998, or 7.1 percent, if one uses only the data from 1991 through 1998. Of course, both capital and labor are used to provide interstate services, and these factors both have higher individual X factors (9.4 to 10.2 percent and 11.1 to 11.2 percent, respectively). Thus, interstate services must have an X factor between 6.9 percent and 11.2 percent.

These results demonstrate that use of a total company TFP introduces a systematic bias in the X factor. Therefore, MCI WorldCom urges the Commission to adopt an X factor based on an interstate-only productivity study. This will result

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parties may perform their own analyses.

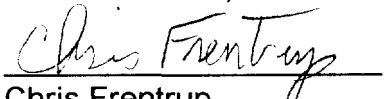
in an X factor somewhere between 6.9 percent and 11.2 percent. Since it is unlikely that interstate and intrastate services use radically different input mixes, a reasonable (and still conservative) method for setting the X factor would be to apply the results obtained from using interstate output growth and total company inputs growth to compute TFP. This would require an X factor of 9.1 percent to 9.5 percent.

VII. CONCLUSION

MCI WorldCom has revised the Commission's TFP study in response to such of the criticisms made by the LEC commenters as are valid. Even with these minor corrections the X factor achieved by the price cap LECs has been in the range of 6.9 to 11.2 percent, depending on the time period examined and the relative mix of inputs used to provide interstate services. The reasonable range for the interstate X factor is between 9.1 and 9.5 percent. Given the LECs' proven ability easily to meet the conservative X factors previously selected by the Commission, MCI WorldCom urges the Commission to select an X factor from the upper level of this range of reasonableness.

Respectfully submitted,

MCI WorldCom, Inc.



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January 24, 2000

APPENDIX A

CORRECTIONS TO COMMISSION'S TOTAL FACTOR PRODUCTIVITY MODEL

Table B-1

1. Corrected 1998 data to remove Southern New England Telephone from all columns

Table B-2

1. Corrected 1998 data to remove Southern New England Telephone from all columns

Table B-3

1. Corrected 1998 data to remove Southern New England Telephone from Access Lines, Switched Access Minutes, and Special Access Lines.
2. Corrected 1995, 1996, and 1997 Switched Access Minutes data to reflect data in the Statistics of Communications Common Carriers (SOCC).
3. Corrected 1997 Special Access Line data to reflect revised ARMIS data. FCC study used data from the 1997 SOCC. Since the SOCC was published, U S West revised its special access line count downward.

Table B-5

1. Corrected 1998 data to remove Southern New England Telephone from reported Labor Compensation and Number of Employees.

Table B-7

1. Corrected 1998 data to remove Southern New England Telephone from reported Property Income w/ Depreciation.

Table B-7B and B-9

1. Depreciation & Amortization amount for 1993 was corrected from 13,244,514,000 to 14,244,514,000 to reflect the 1993 SOCC.

Table B-9

1. Adjusted Total Operating Expense is Total Operating Expense reported in the SOCC less the Excess Benefits computed in Table B-5. The adjustments do not

remove the tax effect of the property income adjustment, because taxes are not included in reported Total Operating Expense.
2. Reported Total Operating Expense for 1998 is adjusted to remove data from Southern New England Telephone Company.

Table B-13 and B-14

1. U.S. NonFarm Business Sector Input Price Growth reflects the price index used in the Commission's original TFP study and in USTA's comments. Since the growth rate for 1998 is not provided by the Bureau of Labor Statistics (BLS), it is assumed to be the average growth rate of the preceding five years, as was done in the original TFP study.
2. U.S. NonFarm Business Sector TFP growth reflects the index used in the Commission's TFP study, which is BLS's current MultiFactor Productivity index.

APPENDIX B

Table B-1. LEC Interstate Revenue ($) - 1985-1998

Year	End User Revenue	Interstate Switched Access Revenue	Special Access Revenue	Total Interstate Revenue
1985	$1,499,413,893	$10,906,203,190	$1,960,688,644	$14,366,305,727
1986	$2,400,475,814	$10,484,265,170	$2,574,800,716	$15,459,541,700
1987	$3,090,639,929	$9,611,996,187	$2,657,677,439	$15,360,313,555
1988	$3,604,221,000	$9,662,529,000	$2,539,698,000	$15,806,448,000
1989	$4,398,692,000	$9,092,575,000	$2,253,922,000	$15,745,189,000
1990	$4,679,142,000	$8,595,750,000	$2,209,064,000	$15,483,956,000
1991	$4,828,177,000	$8,514,130,000	$2,119,037,000	$15,461,344,000
1992	$4,963,262,000	$8,650,880,000	$2,153,565,000	$15,767,707,000
1993	$5,244,094,000	$8,999,065,000	$2,097,997,000	$16,341,156,000
1994	$5,589,662,000	$9,293,783,000	$2,217,125,000	$17,100,570,000
1995	$5,770,285,000	$9,332,869,000	$2,529,667,000	$17,632,821,000
1996	$5,930,960,000	$9,409,639,000	$3,070,598,000	$18,411,197,000
1997	$6,268,026,000	$8,763,815,000	$3,851,028,000	$18,882,869,000
1998	$7,807,872,000	$7,275,241,000	$4,815,249,000	$19,898,362,000

Source: Federal Communications Commission, *Statistics of Communication Common Carriers* [various years]

Table B-2. LEC Revenue ($) by Type of Service[1] - 1985-1998

Year	Local Service Revenue	Intrastate Toll and Intrastate Access Service Revenue	Interstate Service Revenue	Total Revenue
1985	$26,960,554,164	$13,047,095,682	$14,366,305,727	$54,373,955,573
1986	$28,626,174,049	$13,538,946,795	$15,459,541,700	$57,624,662,544
1987	$29,150,842,991	$14,166,723,124	$15,360,313,555	$58,677,879,670
1988	$29,226,988,000	$14,994,975,000	$15,806,448,000	$60,028,411,000
1989	$29,973,157,000	$14,868,219,000	$15,745,189,000	$60,586,565,000
1990	$30,699,085,000	$15,014,729,000	$15,483,956,000	$61,197,770,000
1991	$32,059,008,000	$14,522,276,000	$15,461,344,000	$62,042,628,000
1992	$33,359,990,000	$14,225,181,000	$15,767,707,000	$63,352,878,000
1993	$34,598,957,000	$14,496,831,000	$16,341,156,000	$65,436,944,000
1994	$35,758,637,000	$14,355,983,000	$17,100,570,000	$67,215,190,000
1995	$37,684,860,000	$13,123,225,000	$17,632,821,000	$68,440,906,000
1996	$40,523,387,000	$12,987,476,000	$18,411,197,000	$71,922,060,000
1997	$42,460,592,000	$12,308,613,000	$18,882,869,000	$73,652,074,000
1998	$44,993,354,000	$11,978,176,000	$19,898,362,000	$76,869,892,000

[1]This excludes miscellaneous services

Source: Federal Communications Commission, *Statistics of Communication Common Carriers* [various years]

Table B-3. Interstate Output Index - 1985-1998

Year	End User Revenue Share	Interstate Switched Access Revenue Share	Special Access Revenue Share	Number of Access Lines	Number of Switched Access Minutes	Number of Special Access Lines	Lapseyres Output Index	Paasche Output index	Fisher Ideal Output Index	Fisher Ideal Chained Output Index
1985	0.10437	0.75915	0.13648	92,671,959	156,853,820,000	1,230,590	1	1	1	1
1986	0.15527	0.67817	0.16655	95,333,884	157,302,701,000	1,664,101	1.05325	1.05225	1.05275	1.05275
1987	0.20121	0.62577	0.17302	98,228,585	173,154,171,000	1,764,445	1.08310	1.07881	1.08095	1.13797
1988	0.22802	0.61130	0.16067	98,270,787	187,663,836,000	2,701,817	1.14444	1.11496	1.12961	1.28546
1989	0.27937	0.57748	0.14315	101,190,050	210,406,134,000	2,448,090	1.06577	1.05892	1.06234	1.36560
1990	0.30219	0.55514	0.14267	103,857,988	231,960,296,000	3,518,005	1.12909	1.11450	1.12177	1.53188
1991	0.31227	0.55067	0.13705	107,383,807	246,710,182,000	5,151,699	1.11181	1.09486	1.10330	1.69013
1992	0.31477	0.54865	0.13658	108,938,065	262,187,655,000	6,033,139	1.06252	1.06026	1.06139	1.79388
1993	0.32091	0.55070	0.12839	112,196,681	278,173,161,000	10,153,615	1.13615	1.10262	1.11926	2.00781
1994	0.32687	0.54348	0.12965	115,264,861	298,342,017,323	13,824,365	1.09512	1.08680	1.09095	2.19043
1995	0.32725	0.52929	0.14346	119,887,506	332,335,499,000	16,107,677	1.09645	1.09540	1.09593	2.40054
1996	0.32214	0.51108	0.16678	125,333,996	359,299,134,000	20,775,150	1.09938	1.09869	1.09903	2.63828
1997	0.33194	0.46411	0.20394	131,618,657	384,526,068,000	24,479,958	1.08178	1.08362	1.08270	2.85645
1998	0.39239	0.36562	0.24199	136,216,910	405,214,036,000	34,142,101	1.11706	1.11160	1.11433	3.18302

Source: Federal Communications Commission, *Statistics of Communication Common Carriers* [various years] and Federal Communications Commission, *Monitoring Reports* [various years]

Table B-4. Total LEC Output Index - 1985-1998

Year	Revenue Share - Local	Revenue Share - Intrastate Toll	Revenue Share - Interstate	Local DEMs (000)	Intrastate DEMS (000)	Interstate Fisher Ideal Chained Output Index	Lapseyres Output Index	Paasche Output index	Fisher Ideal Output Index	Fisher Ideal Chained Output Index	Growth Rate (%)
1985	0.4958	0.2400	0.2642	1,380,145,900	164,191,177	1	1	1	1	1	
1986	0.4968	0.2350	0.2683	1,396,014,000	173,173,536	1.05275	1.03277	1.03229	1.03253	1.03253	3.20079
1987	0.4968	0.2414	0.2618	1,404,776,000	183,597,411	1.13797	1.03898	1.03779	1.03838	1.07216	3.76640
1988	0.4869	0.2498	0.2633	1,469,781,200	191,904,837	1.28546	1.06784	1.06673	1.06729	1.14430	6.51199
1989	0.4947	0.2454	0.2599	1,496,826,800	207,298,177	1.36560	1.04541	1.04429	1.04485	1.19562	4.38736
1990	0.5016	0.2453	0.2530	1,514,588,700	217,913,904	1.53188	1.05008	1.04745	1.04877	1.25393	4.76136
1991	0.5167	0.2341	0.2492	1,512,946,987	219,713,721	1.69013	1.02762	1.02531	1.02647	1.28711	2.61222
1992	0.5266	0.2245	0.2489	1,558,762,543	224,278,538	1.79388	1.03581	1.03567	1.03574	1.33311	3.51156
1993	0.5287	0.2215	0.2497	1,640,600,472	227,540,869	2.00781	1.06059	1.05950	1.06005	1.41316	5.83136
1994	0.5320	0.2136	0.2544	1,719,329,169	235,362,364	2.19043	1.05570	1.05560	1.05565	1.49180	5.41556
1995	0.5506	0.1917	0.2576	1,802,545,593	246,926,539	2.40054	1.06065	1.06039	1.06052	1.58209	5.87582
1996	0.5634	0.1806	0.2560	1,955,027,929	263,719,641	2.63828	1.08513	1.08520	1.08517	1.71683	8.17336
1997	0.5765	0.1671	0.2564	2,179,309,093	273,526,580	2.85645	1.09252	1.09278	1.09265	1.87589	8.86075
1998	0.5853	0.1558	0.2589	2,275,450,746	286,005,821	3.18302	1.06237	1.06167	1.06202	1.99224	6.01721

Source: Federal Communications Commission, *Statistics of Communication Common Carriers* [various years] and Federal Communications Commission, *Monitoring Reports* [various years]

Table B-5. Price of Labor - 1985-1998

Year	Labor Compensation ($)	Number of Employees	ARMIS Salaries+Wages ($000)	ARMIS Benefits ($000)	Ratio	Excess Benefits ($)	Adjusted Labor Compensation ($)	Labor Price (original) ($)	Labor Price (adjusted) ($)	Labor Price Index (original) ($)	Labor Price Index (adjusted) ($)	Labor Price - % Change (original)	Labor Price - % Change (adjusted)
1985	16,991,572,326	504,113					16,991,572,326	33,705.88008	33,705.88008	1.00000	1.00000		
1986	16,728,435,454	482,698					16,728,435,454	34,656.11097	34,656.11097	1.02819	1.02819	2.78018%	2.78018%
1987	16,978,905,847	477,714					16,978,905,847	35,541.98924	35,541.98924	1.05447	1.05447	2.52407%	2.52407%
1988	17,030,359,791	466,827	15,033,849	3,636,033	0.19475	0	17,030,359,791	36,481.09426	36,481.09426	1.08234	1.08234	2.60794%	2.60794%
1989	16,910,850,694	461,149	14,977,589	3,669,768	0.19680	0	16,910,850,694	36,671.12082	36,671.12082	1.08797	1.08797	0.51954%	0.51954%
1990	17,586,868,921	443,105	15,230,268	3,768,099	0.19834	0	17,586,868,921	39,690.07102	39,690.07102	1.17754	1.17754	7.91115%	7.91115%
1991	17,186,211,200	414,457	15,038,534	4,537,703	0.23180	622,455,600	16,563,755,600	41,466.81369	39,964.95559	1.23025	1.18570	4.37924%	0.69019%
1992	17,160,988,000	411,167	14,976,159	4,920,448	0.24730	941,126,600	16,219,861,400	41,737.26977	39,448.35408	1.23828	1.17037	0.65011%	-1.30106%
1993	17,956,438,000	395,639	15,479,969	5,918,883	0.27660	1,639,112,600	16,317,325,400	45,385.91494	41,242.96493	1.34653	1.22361	8.38073%	4.44882%
1994	17,154,284,000	367,196	15,085,400	6,539,928	0.30242	2,214,862,400	14,939,421,600	46,716.96859	40,685.14254	1.38602	1.20706	2.89056%	-1.36176%
1995	16,203,522,000	346,843	15,088,974	5,677,574	0.27340	1,524,264,400	14,679,257,600	46,717.16598	42,322.48481	1.38602	1.25564	0.00042%	3.94555%
1996	18,457,448,000	338,040	15,337,179	5,140,712	0.25104	1,045,133,800	17,412,314,200	54,601.37262	51,509.62667	1.61994	1.52821	15.59473%	19.64502%
1997	17,451,673,000	338,177	15,358,125	4,395,933	0.22253	445,121,400	17,006,551,600	51,605.14464	50,288.90670	1.53104	1.49199	-5.64377%	-2.39842%
1998	18,128,861,000	338,404	15,302,883	4,263,993	0.21792	350,617,800	17,778,243,200	53,571.65104	52,535.55868	1.58939	1.55865	3.73987%	4.37057%

Source: Federal Communications Commission, *Statistics of Communication Common Carriers* [various years] and ARMIS Reports 43-02, Table 1.B

Table B-6. Capital Stock Adjustments and the Average Rate of Depreciation - 1985-1998
(Dollar Amounts shown in 000)

Year	TPIS.BOY A	Capital Additions B	TPIS.EOY C	Capital Retires D=A+B-C	Adjustment Factor E	Adjusted Capital Additions F=B*E	Adjusted TPIS.EOY G=A+F-D	Depreciation Accruals H	Adjusted Depreciation Rate (%) I=H/((A+G)/2)
1985	138,879,365	15,001,998	149,061,793	4,819,570	0.888	13,321,774	147,381,569	10,241,376	7.15527%
1986	149,061,793	14,842,725	159,010,189	4,894,329	0.888	13,180,340	157,347,804	11,826,961	7.71971%
1987	159,010,189	14,138,370	168,505,114	4,643,445	0.888	12,554,873	166,921,617	13,311,655	8.16837%
1988	168,505,114	14,284,742	175,860,216	6,929,640	1	14,284,742	175,860,216	13,134,992	7.62852%
1989	175,860,216	13,283,569	182,978,381	6,165,404	1	13,283,569	182,978,381	13,420,810	7.48014%
1990	182,978,381	14,476,334	187,168,695	10,286,020	1	14,476,334	187,168,695	13,439,933	7.26194%
1991	187,168,695	14,527,049	192,034,545	9,661,199	1	14,527,049	192,034,545	13,200,593	6.96228%
1992	192,034,545	14,611,866	196,411,915	10,234,496	1	14,611,866	196,411,915	13,337,581	6.86714%
1993	196,411,915	14,860,116	203,082,418	8,189,613	1	14,860,116	203,082,418	14,032,782	7.02527%
1994	203,082,418	14,717,999	209,325,562	8,474,855	1	14,717,999	209,325,562	14,863,196	7.20801%
1995	209,325,562	15,374,568	217,430,207	7,269,923	1	15,374,568	217,430,207	15,358,553	7.19782%
1996	217,430,207	18,026,150	227,317,120	8,139,237	1	18,026,150	227,317,120	16,252,281	7.30855%
1997	227,317,120	18,253,199	236,896,179	8,674,140	1	18,253,199	236,896,179	16,667,034	7.18077%
1998	236,896,179	18,553,791	248,970,288	6,479,682	1	18,553,791	248,970,288	17,154,619	7.06145%
								avg[1](85-98)	7.30180%
								var[2](85-98)	0.00111%

[1] avg denotes the arithmetic mean of the series

[2] var denotes the variance of the series.

Source: FCC Form M

Table B-7. Quantity of Capital for 1985-1998 and the Imputed Cost of Capital for 1991
(Dollar amounts shown in 000)

Year	Benchmark Capital Stock	Adjusted Capital Additions	BEA Composite Asset Price Index	Capital Stock Quantity	Capital Stock Quantity Index	Property Income w/ Depreciation	Imputed Cost of Capital
1984				103,903,095			
1985	109,602,959	13,321,774	1	109,602,959	1	23,445,593,794	
1986		13,180,340	1.01048	114,643,584	1.04599	26,792,578,943	
1987		12,554,873	1.02734	118,493,306	1.08111	27,701,751,800	
1988		14,284,742	1.03047	123,703,569	1.12865	26,866,209,000	
1989		13,283,569	1.07018	127,083,465	1.15949	25,845,853,000	
1990		14,476,334	1.08973	131,088,425	1.19603	25,584,541,000	
1991		14,527,049	1.10222	134,696,416	1.22895	24,641,357,000	18.798%
1992		14,611,866	1.10830	138,045,138	1.25950	26,477,135,000	
1993		14,860,116	1.11231	141,325,020	1.28943	26,914,823,000	
1994		14,717,999	1.11766	144,174,284	1.31542	26,366,385,000	
1995		15,374,568	1.11481	147,438,176	1.34520	27,166,096,000	
1996		18,026,150	1.11862	152,787,121	1.39401	30,414,808,000	
1997		18,253,199	1.11764	157,962,762	1.44123	30,679,731,000	
1998		18,553,791	1.11769	163,028,757	1.48745	33,340,502,000	

Source: Federal Communications Commission, *Statistics of Communication Common Carriers* [various years]

Table B-7A. Computation of Competitive LEC Rate of Return

	Moody's Baa return	Competitive Cost of Equity	% Equity	Cost of Debt	Competitive ROR
	a	b	c	d	e
1985	12.72	15.73	0.5934	8.81	12.92%
1986	10.39	13.40	0.5934	8.81	11.53%
1987	10.58	13.59	0.5934	8.81	11.65%
1988	10.83	13.84	0.5934	8.81	11.79%
1989	10.18	13.19	0.5948	8.81	11.42%
1990	10.36	13.37	0.5964	8.82	11.53%
1991	9.80	12.81	0.5959	8.95	11.25%
1992	8.98	11.99	0.5968	8.30	10.50%
1993	7.93	10.94	0.5903	7.88	9.69%
1994	8.62	11.63	0.5774	7.38	9.84%
1995	8.20	11.21	0.5656	7.47	9.59%
1996	8.05	11.06	0.5619	7.14	9.34%
1997	7.86	10.87	0.5599	7.39	9.34%
1998	7.22	10.23	0.5496	7.26	8.89%

Sources: column b for 1989 is the implied cost of equity from the FCC's 11.25 prescription; for the remaining years, it is the 1989 amount adjusted by the change in column a

column c is computed from ARMIS 43-02 and Form M data; 1988 and prior is based on the 1988 data

column d is the cost of debt in the 11.25 prescription for 1989 and prior years, and is the cost of debt from ARMIS after that

column e is the weighted average of columns b and d, where column c is the weight on column b

Table B-7B. Quantity of Capital for 1985-1998 and the Imputed Cost of Capital for 1991
(Dollar amounts shown in 000)

Year	Benchmark Capital Stock	Adjusted Capital Additions	BEA Composite Asset Price Index	Capital Stock Quantity	Capital Stock Quantity Index	Property Income w/ Depreciation	Depreciation & Amortization	Property Income less Depreciation	Imputed Property Cost	Competitive Cost of Capital	Competitive Cost of Capital Index	Adjusted Property Income less Depreciation	Adjusted Property Income w/ Depreciation	Adjusted Imputed Cost of Capital
1984				103,903,095										
1985	109,602,959	13,321,774	1	109,602,959	1	23,445,593,794	10,024,710,656	13,420,883,138	12.917%	12.916%	1.00000	13,420,399,325	23,445,109,981	22.564%
1986		13,180,340	1.01048	114,643,584	1.04599	26,792,578,943	11,592,001,248	15,200,577,695	13.869%	11.534%	0.89296	12,641,331,206	24,233,332,454	22.110%
1987		12,554,873	1.02734	118,493,306	1.08111	27,701,751,800	13,316,999,560	14,384,752,240	12.547%	11.646%	0.90169	13,351,950,416	26,868,949,976	23.262%
1988		14,284,742	1.03047	123,703,569	1.12865	26,866,209,000	13,646,937,000	13,219,272,000	11.156%	11.795%	0.91318	13,976,078,965	27,623,015,965	23.312%
1989		13,283,569	1.07018	127,083,465	1.15949	25,845,853,000	13,860,101,000	11,985,752,000	9.689%	11.415%	0.88380	14,121,193,943	27,981,294,943	22.620%
1990		14,476,334	1.08973	131,088,425	1.19603	25,584,541,000	13,931,515,000	11,653,026,000	9.170%	11.533%	0.89288	14,656,134,030	28,587,649,030	22.495%
1991		14,527,049	1.10222	134,696,416	1.22895	24,641,357,000	13,499,778,000	11,141,579,000	8.499%	11.251%	0.87106	14,748,488,631	28,248,266,631	21.549%
1992		14,611,866	1.10830	138,045,138	1.25950	26,477,135,000	13,822,882,000	12,654,253,000	9.395%	10.502%	0.81311	14,146,198,217	27,969,080,217	20.765%
1993		14,860,116	1.11231	141,325,020	1.28943	26,914,823,000	14,244,514,000	12,670,309,000	9.178%	9.687%	0.74998	13,372,438,598	27,616,952,598	20.006%
1994		14,717,999	1.11766	144,174,284	1.31542	26,366,385,000	15,068,058,000	11,298,327,000	7.995%	9.835%	0.76148	13,899,914,814	28,967,972,814	20.497%
1995		15,374,568	1.11481	147,438,176	1.34520	27,166,096,000	15,556,284,000	11,609,812,000	8.053%	9.587%	0.74221	13,821,374,495	29,377,658,495	20.376%
1996		18,026,150	1.11862	152,787,121	1.39401	30,414,808,000	16,377,242,000	14,037,566,000	9.521%	9.344%	0.72340	13,776,092,950	30,153,334,950	20.452%
1997		18,253,199	1.11764	157,962,762	1.44123	30,679,731,000	16,758,832,000	13,920,899,000	9.111%	9.339%	0.72303	14,268,481,435	31,027,313,435	20.308%
1998		18,553,791	1.11769	163,028,757	1.48745	33,340,502,000	17,306,863,000	16,033,639,000	10.150%	8.893%	0.68851	14,047,500,182	31,354,363,182	19.849%

Source: Federal Communications Commission, *Statistics of Communication Common Carriers* [various years]

Table B-8. Cost of Capital - 1985-1998

Year	Moody's Baa Corporate Bond Rate (%)	Adjusted Imputed Competitive Cost of Capital	Competitive Cost of Capital Index
1985	12.72	22.564	1.00000
1986	10.39	22.110	0.97987
1987	10.58	23.262	1.03094
1988	10.83	23.312	1.03313
1989	10.18	22.620	1.00245
1990	10.36	22.495	0.99693
1991	9.80	21.549	0.95500
1992	8.98	20.765	0.92023
1993	7.93	20.006	0.88661
1994	8.62	20.497	0.90840
1995	8.20	20.376	0.90304
1996	8.05	20.452	0.90636
1997	7.86	20.308	0.89998
1998	7.22	19.849	0.87967

Source: Moody's Baa Corporate Bond Rate is from Table B-73 of the *Economic Report of the President-1999*, U.S. Government Printing Office, Washington, DC, 1999.

Table B-9. Materials Input Quantity - 1985-1998

Year	Materials Price Index A	Adjusted Total Operating Expense ($) B	Depreciation and Amortization Expense ($) C	Adjusted Employee Compensation ($) D	Materials Expense ($) E=B-C-D	Materials Quantity F=E/A	Materials Quantity Index
1985	1.00000	40,953,072,435	10,024,710,656	16,991,572,326	13,936,789,453	13,936,789,453	1.00000
1986	1.03135	42,424,084,849	11,592,001,248	16,728,435,454	14,103,648,147	13,674,938,815	0.98121
1987	1.05353	44,293,127,430	13,316,999,560	16,978,905,847	13,997,222,023	13,286,021,303	0.95331
1988	1.08639	46,809,139,000	13,646,937,000	17,030,359,791	16,131,842,209	14,849,006,812	1.06545
1989	1.12623	48,600,813,000	13,860,101,000	16,910,850,694	17,829,861,306	15,831,456,546	1.13595
1990	1.17203	49,544,744,000	13,931,515,000	17,586,868,921	18,026,360,079	15,380,459,612	1.10359
1991	1.20494	50,278,593,400	13,499,778,000	16,563,755,600	20,215,059,800	16,776,818,597	1.20378
1992	1.23480	49,757,498,400	13,822,882,000	16,219,861,400	19,714,755,000	15,965,949,951	1.14560
1993	1.25535	51,127,522,400	14,244,514,000	16,317,325,400	20,565,683,000	16,382,429,601	1.17548
1994	1.29144	53,702,000,600	15,068,058,000	14,939,421,600	23,694,521,000	18,347,364,957	1.31647
1995	1.32167	55,306,829,600	15,556,284,000	14,679,257,600	25,071,288,000	18,969,400,834	1.36110
1996	1.36140	56,839,360,200	16,377,242,000	17,412,314,200	23,049,804,000	16,930,956,368	1.21484
1997	1.39550	59,284,530,600	16,758,832,000	17,006,551,600	25,519,147,000	18,286,740,953	1.31212
1998	1.43074	60,485,635,200	17,306,863,000	17,778,243,200	25,400,529,000	17,753,482,651	1.27386

Source: Materials price index comes from the Input/Output Tables compiled by the Bureau of Economic Analysis of the U.S. Department of Commerce, depreciation and amortization expense data come from the *Statistics of Communication Common Carriers*, and the other values are derived as detailed in the text.

Table B-10. Factor of Production Shares of Total Payments - 1985-1998

Year	Adjusted Labor Compensation ($)	Adjusted Property Income w/ Depreciation ($)	Adjusted Material Payments ($)	Adjusted Total Factor Payments ($)	Labor Share	Capital Share	Materials Share
1985	16,991,572,326	23,445,109,981	13,936,789,453	54,373,471,760	0.31250	0.43119	0.25632
1986	16,728,435,454	24,233,332,454	14,103,648,147	55,065,416,055	0.30379	0.44008	0.25613
1987	16,978,905,847	26,668,949,976	13,997,222,023	57,645,077,846	0.29454	0.46264	0.24282
1988	17,030,359,791	27,623,015,965	16,131,842,209	60,785,217,965	0.28017	0.45444	0.26539
1989	16,910,850,694	27,981,294,943	17,829,861,306	62,722,006,943	0.26962	0.44612	0.28427
1990	17,586,868,921	28,587,649,030	18,026,360,079	64,200,878,030	0.27394	0.44528	0.28078
1991	16,563,755,600	28,248,266,631	20,215,059,800	65,027,082,031	0.25472	0.43441	0.31087
1992	16,219,861,400	27,969,080,217	19,714,755,000	63,903,696,617	0.25382	0.43768	0.30851
1993	16,317,325,400	27,616,952,598	20,565,683,000	64,499,960,998	0.25298	0.42817	0.31885
1994	14,939,421,600	28,967,972,814	23,694,521,000	67,601,915,414	0.22099	0.42851	0.35050
1995	14,679,257,600	29,377,658,495	25,071,288,000	69,128,204,095	0.21235	0.42497	0.36268
1996	17,412,314,200	30,153,334,950	23,049,804,000	70,615,453,150	0.24658	0.42701	0.32641
1997	17,006,551,600	31,027,313,435	25,519,147,000	73,553,012,035	0.23121	0.42184	0.34695
1998	17,778,243,200	31,354,363,182	25,400,529,000	74,533,135,382	0.23853	0.42068	0.34080

Source: Federal Communications Commission, *Statistics of Communication Common Carriers*, [various years] with adjustments as described in the text.

Table B-11. Total LEC Input Quantity Index - 1985-1998

Year	Labor Share	Capital Share	Materials Share	Labor Quantity	Capital Quantity Index	Materials Quantity Index	Lapseyres Input Quantity Index	Paasche Input Quantity Index	Fisher Ideal Input Quantity Index	Fisher Ideal Chained Input Quantity Index	Growth Rate (%)
1985	0.31250	0.43119	0.25632	504,113	1	1	1	1	1	1	
1986	0.30379	0.44008	0.25613	482,698	1.04599	0.98121	1.00174	1.00097	1.00135	1.00135	0.13528
1987	0.29454	0.46264	0.24282	477,714	1.08111	0.95331	1.00436	1.00487	1.00462	1.00598	0.46045
1988	0.28017	0.45444	0.26539	466,827	1.12865	1.06545	1.04220	1.04225	1.04222	1.04845	4.13577
1989	0.26962	0.44612	0.28427	461,149	1.15949	1.13595	1.02657	1.02689	1.02673	1.07648	2.63778
1990	0.27394	0.44528	0.28078	443,105	1.19603	1.10359	0.99541	0.99425	0.99483	1.07091	-0.51834
1991	0.25472	0.43441	0.31087	414,457	1.22895	1.20378	1.02004	1.02031	1.02017	1.09251	1.99714
1992	0.25382	0.43768	0.30851	411,167	1.25950	1.14560	0.99375	0.99297	0.99336	1.08526	-0.66620
1993	0.25298	0.42817	0.31885	395,639	1.28943	1.17548	1.00886	1.00818	1.00852	1.09451	0.84844
1994	0.22099	0.42851	0.35050	367,196	1.31542	1.31647	1.02869	1.02975	1.02922	1.12649	2.87989
1995	0.21235	0.42497	0.36268	346,843	1.34520	1.36110	1.00933	1.00892	1.00913	1.13677	0.90853
1996	0.24658	0.42701	0.32641	338,040	1.39401	1.21484	0.97105	0.97015	0.97060	1.10335	-2.98398
1997	0.23121	0.42184	0.34695	338,177	1.44123	1.31212	1.04070	1.04127	1.04099	1.14857	4.01707
1998	0.23853	0.42068	0.34080	338,404	1.48745	1.27386	1.00357	1.00300	1.00329	1.15234	0.32802

Source: Table B-10, Federal Communications Commission, *Statistics of Communication Common Carriers* [various years] Table B-7, and Table B-9.

Table B-12. Summary of the Components of the LECs' Price Cap X-Factor (excluding the Consumer Productivity Dividend) - 1985-1998

Year	U.S. Nonfarm Business Sector TFP Growth Rate (%) A	LECs' Output Growth Rate (%) B	LECs' Input Growth Rate (%) C	LECs' TFP Growth Rate (%) D=B-C	TFP Differential (%) E=D-A	U.S. Nonfarm Business Sector Input Price Growth Rate (%) F	LECs' Input Price Growth Rate (%) G	Input Price Differential (%) H=F-G	X-factor (%) I=E+H	Previous X-factor[1] (%) J
1986	1.10166	3.20079	0.13528	3.06550	1.96384	2.32711	0.76145	1.56566	3.52950	-0.5
1987	-0.39920	3.76640	0.46045	3.30594	3.70514	3.45067	3.57916	-0.12849	3.57666	5
1988	0.29955	6.51199	4.13577	2.37622	2.07667	5.01816	1.62712	3.39104	5.46771	5
1989	0.19920	4.38736	2.63778	1.74958	1.55037	2.41770	-0.22519	2.64289	4.19326	7.9
1990	-0.69895	4.76136	-0.51834	5.27969	5.97865	3.31050	3.03030	0.28020	6.25885	8.8
1991	-1.41274	2.61222	1.99714	0.61508	2.02782	1.76996	-0.88900	2.65896	4.68677	5.8
1992	1.61294	3.51156	-0.66620	4.17776	2.56483	3.14907	-1.18958	4.33864	6.90347	3.4
1993	0.09995	5.83136	0.84844	4.98291	4.88296	2.17615	0.03374	2.14241	7.02538	4.7
1994	0.39880	5.41556	2.87989	2.53567	2.13687	3.36732	1.66637	1.70095	3.83782	5.4
1995	0.29806	5.87582	0.90853	4.96729	4.66923	2.61453	1.42762	1.18691	5.85614	6.8
1996	1.47713	8.17336	-2.98398	11.15734	9.68021	2.99614	5.67789	-2.68175	6.99846	
1997	0.39024	8.86075	4.01707	4.84368	4.45343	2.29895	-0.03995	2.33890	6.79233	
1998	0.59259	6.01721	0.32802	5.68919	5.09660	2.69062	0.92214	1.76848	6.86508	
				avg[2](86-98)	3.90666			1.63114	5.53780	
				var[3](86-98)	4.77350			2.84753	1.80573	
				avg(91-98)	4.43899			1.68169	6.12068	
				var(91-98)	5.34740			3.49387	1.31807	
				avg(86-95)	3.15564			1.97792	5.13356	5.23
				var(86-95)	2.13663			1.66945	1.63713	5.93
				avg(91-95)	3.25634			2.40557	5.66191	5.22
				var(91-95)	1.57657			1.17037	1.54329	1.29

[1] X-factor reported in the 1997 Price Cap Review Order

[2] avg denotes the arithmetic mean of the series

[3] var denotes the variance of the series.

Source: Bureau of Labor Statistics' Multifactor Productivity Table 2: Private Nonfarm Business: Productivity and Related Indexes (annual and quarterly tables), Table B-4, Table B-11, and Table B-13.

Table B-13. Total LEC Input Price Index - 1985-1998

Year	Labor Share	Capital Share	Materials Share	Labor Price Index	Capital Price Index	Materials Price Index	Lapseyres Input Price Index	Paasche Input Price Index	Fisher Ideal Input Price Index	Fisher Ideal Chained Input Price Index	Growth Rate (%)
1985	0.31250	0.43119	0.25632	1	1	1	1	1	1	1	
1986	0.30379	0.44008	0.25613	1.02819	0.97987	1.03135	1.00816	1.00712	1.00764	1.00764	0.76145
1987	0.29454	0.46264	0.24282	1.05447	1.03094	1.05353	1.03621	1.03667	1.03644	1.04436	3.57916
1988	0.28017	0.45444	0.26539	1.08234	1.03313	1.08639	1.01634	1.01647	1.01640	1.06149	1.62712
1989	0.26962	0.44612	0.28427	1.08797	1.00245	1.12623	0.99770	0.99780	0.99775	1.05911	-0.22519
1990	0.27394	0.44528	0.28078	1.17754	0.99693	1.17203	1.03130	1.03023	1.03077	1.09169	3.03030
1991	0.25472	0.43441	0.31087	1.18570	0.95500	1.20494	0.99105	0.99125	0.99115	1.08203	-0.88900
1992	0.25382	0.43768	0.30851	1.17037	0.92023	1.23480	0.98860	0.98775	0.98817	1.06923	-1.18958
1993	0.25298	0.42817	0.31885	1.22361	0.88661	1.25535	1.00069	0.99999	1.00034	1.06959	0.03374
1994	0.22099	0.42851	0.35050	1.20706	0.90840	1.29144	1.01627	1.01734	1.01680	1.08757	1.66637
1995	0.21235	0.42497	0.36268	1.25564	0.90304	1.32167	1.01457	1.01419	1.01438	1.10321	1.42762
1996	0.24658	0.42701	0.32641	1.52821	0.90636	1.36140	1.05856	1.05828	1.05842	1.16766	5.67789
1997	0.23121	0.42184	0.34695	1.49199	0.89998	1.39550	0.99933	0.99987	0.99960	1.16719	-0.03995
1998	0.23853	0.42068	0.34080	1.55865	0.87967	1.43074	1.00957	1.00896	1.00926	1.17800	0.92214

Source: Table B-10, Table B-5, Table B-8, and Table B-9.

Table B-14. Summary of the Components of the LECs' Interstate Price Cap X-Factor (excluding the Consumer Productivity Dividend) - 1985-1998

Year	U.S. Nonfarm Business Sector TFP Growth Rate (%) A	LECs' Interstate Output Growth Rate (%) B	LECs' Input Growth Rate (%) C	LECs' TFP Growth Rate (%) D=B-C	TFP Differential (%) E=D-A	U.S. Nonfarm Business Sector Input Price Growth Rate (%) F	LECs' Input Price Growth Rate (%) G	Input Price Differential (%) H=F-G	X-factor (%) I=E+H	Previous X-factor[1] (%) J
1986	1.10166	5.14068	0.13528	5.00540	3.90373	2.32711	0.76145	1.56566	5.46939	-0.5
1987	-0.39920	7.78433	0.46045	7.32387	7.72308	3.45067	3.57916	-0.12849	7.59459	5
1988	0.29955	12.18682	4.13577	8.05105	7.75150	5.01816	1.62712	3.39104	11.14254	5
1989	0.19920	6.04719	2.63778	3.40941	3.21021	2.41770	-0.22519	2.64289	5.85309	7.9
1990	-0.69895	11.49069	-0.51834	12.00902	12.70798	3.31050	3.03030	0.28020	12.98818	8.8
1991	-1.41274	9.83068	1.99714	7.83354	9.24628	1.76996	-0.88900	2.65896	11.90523	5.8
1992	1.61294	5.95758	-0.66620	6.62378	5.01084	3.14907	-1.18958	4.33864	9.34949	3.4
1993	0.09995	11.26657	0.84844	10.41813	10.31818	2.17615	0.03374	2.14241	12.46059	4.7
1994	0.39880	8.70504	2.87989	5.82515	5.42635	3.36732	1.66637	1.70095	7.12730	5.4
1995	0.29806	9.15988	0.90853	8.25135	7.95329	2.61453	1.42762	1.18691	9.14019	6.8
1996	1.47713	9.44316	-2.98398	12.42714	10.95000	2.99614	5.67789	-2.68175	8.26826	
1997	0.39024	7.94546	4.01707	3.92839	3.53814	2.29895	-0.03995	2.33890	5.87704	
1998	0.59259	10.82512	0.32802	10.49710	9.90450	2.69062	0.92214	1.76848	11.67299	
				avg[2](86-98)	7.51108			1.63114	9.14222	
				var[3](86-98)	8.74180			2.84753	6.62112	
				avg(91-98)	7.79345			1.68169	9.47514	
				var(91-98)	6.79807			3.49387	4.96150	
				avg(86-95)	7.32514			1.97792	9.30306	5.23
				var(86-95)	7.99587			1.66945	6.79859	5.93
				avg(91-95)	7.59099			2.40557	9.99656	5.22
				var(91-95)	4.33032			1.17037	3.81984	1.29

[1] X-factor reported in the 1997 Price Cap Review Order

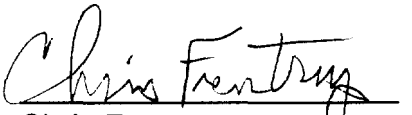
[2] avg denotes the arithmetic mean of the series

[3] var denotes the variance of the series.

Source: Bureau of Labor Statistics' Multifactor Productivity Table 2: Private Nonfarm Business: Productivity and Related Indexes (annual and quarterly tables), Table B-4, Table B-11, and Table B-13.

STATEMENT OF VERIFICATION

I have read the foregoing and, to the best of my knowledge, information, and belief, there is good ground to support it, and it is not interposed for delay. I verify under penalty of perjury that the foregoing is true and correct. Executed on January 24, 2000.



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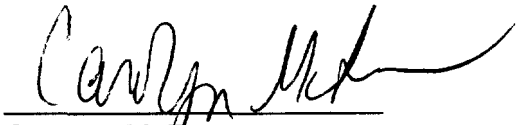
CERTIFICATE OF SERVICE

I, Carolyn McTaw, do hereby certify that on this 24th day of January, 2000, I caused a copy of the foregoing Reply Comments of MCI WorldCom, Inc. to be served upon each of the parties listed on the attached Service List by U.S. First Class mail, postage prepaid.



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